

REMARKS

A. Request for Reconsideration

Applicants have carefully considered the matters raised by the Examiner in the outstanding Office Action but remain of the position that patentable subject matter is present. Applicants respectfully request reconsideration of the Examiner's position based on the amendments to the specification, the amendments to the claims and the following remarks.

B. The Invention

The present invention is directed to a transparent film for a display substrate and a method of manufacturing the same, a display substrate and a method of manufacturing the same, a liquid crystal display, an organic electroluminescence display, and a touch panel.

In one of the novel aspects of the invention, the transparent film includes a plasticizer in an amount of less than 1%.

Cellulose ester is a moisture absorbing resin having a high moisture absorbing coefficient. Consequently, prior art films contain a plasticizer in as much as 5-20% by mass. Applicants have discovered that the low plasticizer percentage of the

present invention achieves a high glass-transition temperature, while reducing the thermal expansion coefficient by biaxially drawing the cellulose ester film. Also, Applicants have discovered that birefringence can be minimized, even if the film of the invention is drawn (see par. 5 on page 4 to par. 1 on page 5 of the application).

C. Claim Status

Claims 1-21 are presented for further prosecution.

D. Claim Objections and Amendments

Claims 4-12 and 15-17 had been rejected to for having improperly located periods and for capitalizing the word "claim".

Applicants have amended claims 4-12 and 15-17 as correction.

Claims 3-12, 18 and 19 have also been amended for formal reasons. New matter has not been added.

E. Claim Rejections

Claims 19-21 had been rejected as being anticipated by Murakami (U.S. 2003/0170482). Claims 1-3, 5, 7 and 12-18 had been rejected as being unpatentable over Murakami. Claim 4 had

been rejected as being unpatentable over Murakami in view of Kobayashi (US 2003/0151707). Claim 10 had been rejected as being unpatentable over Murakami in view of Hashimoto (JP 2003-055477). Claims 8-9 had been rejected as being unpatentable over Murakami in view of Shimizu (US 2002/0102369). Claim 11 had been rejected as being unpatentable over Murakami in view of Tasaka (US 2003/0020208). Claims 1-3, 5-7, 11-17 and 19-21 had been rejected as being unpatentable over Okubo (US 2004/0150331).

1. Anticipation Rejection of claim 19 based on Murakami

Murakami had been cited to teach the method for manufacturing the display substrate of claim 19.

Claim 19 recites a step of exposing the transparent film of claim 18. Thus, claim 19 includes the limitation that the dope contains a plasticizer in an amount of less than 1% as recited in claim 18.

Murakami does not teach less than 1% of a plasticizer as recited in claim 19. Instead, Murakami teaches 1-30% of a plasticizer (see par. 66 of Murakami). Murakami's range is above the claimed range of less than 1%, and Murakami therefore does not anticipate claim 19.

In addition to par. 66 of Murakami, the examples of Murakami employ a plasticizer in an amount greater than the 1% recited in claim 19. In pars. 287 and 290 of Murakami, dopes A1 and A9 contain 14 kg of plasticizer (TPP plus BDP) per 115 kg of all components (note that methyl acetate and ethanol are volatilized). Thus, dopes A1 and A9 contain approximately 12% plasticizers, which is above the claimed range of less than 1%. Thus, pars. 287 and 290 of Murakami further evidence the fact that Murakami does not anticipate the plasticizer range of claim 19.

Furthermore, Murakami employs an amount of plasticizer above the claimed range in Table 1 in par. 314. In Table 1, dopes A1 through A12 contain at least 10 kg of plasticizers (dopes A1, A5, A9, A10, A11 and A12 having 11 kg TPP plus 3 kg BDP; dopes A2, A4, A6, A7 and A8 having 10 kg of E-1; and dope A3 having 4 kg of EPEG plus 6 kg of PDCH). Similar to the 14 kg of plasticizers in pars. 287 and 290 of Murakami, the at least 10 kg of plasticizers employed in Table 1 is also above the range of claim 19.

In summary, par. 66 of Murakami teaches 1-30% of a plasticizer, the dopes of pars. 287 and 290 employ 14 kg of plasticizers which is approximately 12%, and the dopes in Table 1 employ at least 10 kg of plasticizers which is also above the

claimed range. Murakami therefore does not anticipate claim 19 which recites a plasticizer in less than 1%.

2. Obviousness Rejection of Claims 1 and 18 based on Murakami

Murakami had been cited to teach the transparent film of claim 1, and the method for manufacturing the transparent film of claim 18. Claim 1 recites that the transparent film contains a plasticizer in an amount of less than 1%. Similarly, claim 18 recites the step of casting a dope having a plasticizer in an amount of less than 1%.

In section 8 of the Office Action with regard to claim 1, the Examiner stated that Murakami teaches a plasticizer in an amount of less than 1%. The Examiner also stated that it would be obvious to use less than 1% plasticizer. In section 15 of the Office Action with regard to claim 18, the Examiner again stated that Murakami teaches less than 1% of a plasticizer, and that the method of claim 18 is obvious regardless of whether the plasticizer is present in less than 1%. Applicants respectfully disagree.

Tables 1 and 2 on pages 104 and 110 demonstrate the criticality of employing less than 1% plasticizer as recited in claims 1 and 18. This criticality is not taught or suggested by Murakami, and Applicants therefore respectfully submit that claims 1 and 18 are not obvious.

In Table 1, Inventive substrates 104 and 105 included cellulose ester films having an EPEG plasticizer. EPEG was employed in an amount within the claimed range, e.g., 0.1% in Inventive substrate 104 and 0.5% in Inventive Sample 105. In contrast, Comparative substrate 106 employed 1.0% EPEG, which is above the claimed range of less than 1%.

Transparent conductive films 204-206 in Table 2 respectively included substrates 104-106. Transparent conductive films 204-206 were evaluated for moisture permeability and specific resistance as described on page 109 of the application. The evaluation results are shown in Table 2.

As shown in Table 2, Inventive transparent conductive films 204 and 205 had an immediate moisture permeability of 0.48 g/m²/d, which was superior to the 0.45 g/m²/d immediate moisture permeability of Comparative transparent conductive film 206. Also, Inventive transparent conductive films 204 and 205 exhibited superior moisture permeability after a thermal shock cycle, while softening and deformation occurred for Comparative

transparent conductive film 206 thereby rendering moisture permeability unsuccessful. Furthermore, Inventive transparent conductive films 204 and 205 had a specific resistance of 2.2×10^{-4} and $2.3 \times 10^{-4} \Omega \cdot \text{cm}$, which was superior to the $2.8 \times 10^{-4} \Omega \cdot \text{cm}$ specific resistance of Comparative transparent conductive film 206.

Murakami does not teach or suggest less than 1% of a plasticizer as explained in section 1 above. Moreover, Murakami does not teach or suggest the criticality of employing less than 1% of a plasticizer as demonstrated in Tables 1 and 2 of the application. Applicants therefore respectfully submit that claims 1 and 18 are not obvious based on the teachings of Murakami.

3. Dependent Claim Rejections based on Murakami

Dependent claims 2-5, 7-17, 20 and 21 had been rejected based on Murakami either alone or in combination with Kobayashi, Hashimoto, Shimizu, or Tasaka.

Kobayashi, Hashimoto, Shimizu, and Tasaka do not teach or suggest a plasticizer in an amount of less than 1% as recited in claims 1, 18 and 19. It is therefore submitted that all of the claims are patentable over Murakami taken alone or in combination with the other cited references.

4. Rejection based on Okubo

Claims 1-3, 5-7, 11-17 and 19-21 had been rejected as being unpatentable over Okubo et al. (US 2004/0150331).

In section 21 of the Office Action, the Examiner recognized that Okubo is prior art under 102(e) only. It was suggested that the rejection could be overcome by showing that Okubo is disqualified under §103(c) as prior art in a rejection under §103(a).

In accordance with §103(c), Applicants submit that the subject matter of Okubo and the claimed invention were, at the time the claimed invention was made, owned by the same person or subject to an obligation of assignment to the same person. The §103 rejection based on Okubo is therefore believed to be overcome.

F. Extension of Time

A one month extension of time is requested and payment is enclosed herewith.

G. Conclusion

In view of the foregoing, it is respectfully submitted that the application is in condition for allowance and such action is respectfully requested. Should any additional fees or extensions

of time be necessary in order to maintain this Application in pending condition, appropriate requests are hereby made and authorization is given to debit Account No. 02-2275.

Respectfully submitted,

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